



1646  
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**PIPER RUDNICK LLP**  
1200 NINETEENTH STREET, NW  
WASHINGTON, DC 20036-2412  
TELEPHONE: 202-861-3900  
FACSIMILE: 202-223-2085

DOCKET NO.: 9528-002-27

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

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**JAN 02 2003**

**TECH CENTER 1600/2900**

Re: Serial No.: 09/519,728  
Applicant(s): Bruce D. WEINTRAUB, et al.  
Filing Date: March 3, 2000  
For: MUTANTS OF THYROID STIMULATING HORMONE AND  
METHODS BASED THEREON  
Group Art Unit: 1646  
Examiner: Eliane M. Lazar Wesley

SIR:

Attached hereto for filing are the following papers:

FEE TRANSMITTAL  
REQUEST FOR EXTENSION OF TIME (1 month)  
AMENDMENT

Our check in the amount of \$ 110.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. 1.136 for any necessary extension of time to make the filing of the attached documents timely, please charge or credit the difference to Deposit Account No. 50-1442. Further, if these papers are not considered timely filed, then a request is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

PIPER RUDNICK LLP

CHRIS RAIMUND  
REG. NO. 47,258

FOR Steven B. Kelber  
Attorney of Record  
Registration No.: 30,073

Patrick R. Delaney  
Registration No.: 45,338



# FEE TRANSMITTAL

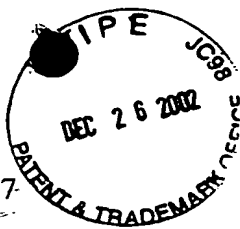
<b>FEE TRANSMITTAL</b>		Docket No.	9528-002-27	
		Serial No.	09/519,728	
		Filing Date	March 2, 2000	
		Inventor(s)	Bruce D. WEINTRAUB, et al.	
		Group Art Unit	1646	
TOTAL AMOUNT OF PAYMENT		\$110.00	Examiner	Eliane M. Lazar Wesley

1. <input type="checkbox"/> Applicant claims small entity status.										FEE CALCULATION (continued)							
■ Charge any <u>UNDERPAYMENT</u> or credit any <u>OVERPAYMENT</u> in the indicated fees to Deposit Account No. 50-1442.										3. ADDITIONAL FEES							
□ Charge the indicated fees to Deposit Account No. 50-1442.										Large Entity		Small Entity		Fee Description			
2. ■ Check enclosed.										Fee Code	Fee (\$)	Fee Code	Fee (\$)		Fee Paid		
FEE CALCULATION										1051	130	2051	65	Surcharge-late filing fee or oath			
1. BASIC FILING FEE										1052	50	2052	25	Surcharge-late provisional filing fee or cover sheet			
Large Entity		Small Entity		Fee Description				1053	130	1053	130	Non-English specification					
Fee Code	Fee (\$)	Fee Code	Fee (\$)					Fee Paid	1812	2520	1812	2520	Ex parte reexam. fee				
1001	740	2001	370	Utility filing fee					1251	110	2251	55	1-mo. ext. of time	\$110.00			
1002	330	2002	165	Design filing fee					1252	400	2252	200	2-mo. ext. of time				
1003	510	2003	255	Plant filing fee					1253	920	2253	460	3-mo. ext. of time				
1004	740	2004	370	Reissue filing fee					1254	1440	2254	720	4-mo. ext. of time				
1005	160	2005	80	Provisional filing fee					1255	1960	2255	980	5-mo. ext. of time				
SUBTOTAL (1)								\$0.00	1401	320	2401	160	Notice of Appeal				
2. EXTRA CLAIM FEES										1402	320	2402	160	Appeal Brief			
tot. claims		15	-	20*	=	0	x	\$18	=	0	1403	280	2403	140	Request for Oral Hearing		
ind. claims		3	-	3*	=	0	x	\$84	=	0	1501	1280	2501	640	Utility/Reissue Issue Fee		
<input type="checkbox"/>		Multiple Dependent Claims						\$280	=		1502	460	2502	230	Design Issue Fee		
Large Entity		Small Entity		Fee Description				1503	620	2503	310	Plant Issue Fee					
Fee Code	Fee (\$)	Fee Code	Fee (\$)						1460	130	1460	130	Petitions to the Commissioner				
1202	18	2202	9	Claims in excess of 20					1806	180	1806	180	IDS Submission				
1201	84	2201	42	Independent claims in excess of 3					8021	40	8021	40	Assignment				
1203	280	2203	140	Multiple dependent claim, if not paid					1801	740	2801	370	For Filing RCE				
1204	84	2204	42	*Reissue independent claims over original patent					1802	900	1802	900	Expedited Design				
1205	18	2205	9	*Reissue claims in excess of 20 and over original patent				OTHER (indicate below):									
SUBTOTAL (2)								\$0.00		1							
* or number previously paid, if greater; For Reissues, see above										SUBTOTAL (3)				\$110.00			

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Name	Steven B. Kelber	Registration No.	30,073
Signature		Date	12/26/02
Name	FOR Patrick R. Delaney	Registration No.	45,338

DOCKET NO. 9528-002-27



#14/B  
DMJ  
1-28-03

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF: Bruce D. WEINTRAUB et al. ART UNIT: 1646  
SERIAL NO.: 09/519,728 EXAMINER: E.M. Lazar Wesley  
FILING DATE: March 3, 2000  
FOR: MUTANTS OF THYROID STIMULATING HORMONE AND METHODS  
BASED THEREON

**AMENDMENT**

ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

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TECH CENTER 1600/2900

SIR:

Responsive to the outstanding Office Action dated August 26, 2002, entry of the  
following is respectfully requested:

**IN THE CLAIMS**

Please add the following new claims:

-- 69. (New) A mutant TSH heterodimer comprising (a) a TSH  $\beta$  subunit joined via a peptide bond at its carboxyl terminus to the amino terminus of the carboxyl terminal extension peptide of human chorionic gonadotropin; and (b) an  $\alpha$  subunit, wherein at least the TSH  $\beta$  subunit or the TSH  $\alpha$  subunit contains at least one amino acid substitution;

B1 wherein the bioactivity of the mutant TSH heterodimer is greater than the bioactivity of wild type TSH heterodimer; and wherein the at least one amino acid substitution is in amino acid residues selected from among positions 58-68 of the amino acid sequence of TSH  $\beta$  subunit as depicted in Figure 2 (SEQ ID NO:2).